05-GF-113
(1300)

TWO YEAR REPORT DOCUMENTING COMPLIANCE WITH THE PREVENTATIVE MAINTENANCE PLAN

COLUMBUS WATER & LIGHT

FILING DEADLINE
FEBRUARY 1, 2003

January 30, 2003

John O. Andler, Superintendent
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Electric Division

This report format was prepared by the MEUW work group for PSC Rule 113.0607 for use by the 82 municipal electric utilities in Wisconsin and endorsed by PSC staff as meeting the requirements of Rule PSC 113.0607.

CITY OF COLUMBUS

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Water & Light Department

January 30, 2003

Mr. Scot Cullen, Chief Electric Engineer
Public Service Commission
610 N. Whitney Way
P.O. Box 7854
Madison, WI 53707-7854

RE: In the Matter of Filing Reporting Requirements for Appropriate Inspection and Maintenance, PSC Rule 113.0607(6)

Dear Mr. Cullen:

Enclosed for filing are 3 copies of Columbus Water & Light's report to the commission, submitted every two years, showing compliance with its Preventative Maintenance Plan.

Very truly yours,

John O. Andler

John O. Andler
Superintendent

Enclosures

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Electric Division

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I Reporting Requirements: PSC 113.0607(6) states;

Each utility shall provide a periodic report to the commission showing compliance with its Preventative Maintenance Plan. The report shall include a list of inspected circuits and facilities, the condition of facilities according to established rating criteria, schedules established and success at meeting the established schedules.

II Inspection Schedule and Methods:

SCHEDULE:	MONTHLY	ANNUAL	EVERY 5 YEARS
Transmission (69Kv)		X	X
Substations	X	X	
Distribution (OH & UG)			X

METHODS: Five criteria groups will be used to complete the inspection of all facilities.

1. IR – infrared thermography used to find poor electrical connections and/or oil flow problems in equipment.
2. RFI - Radio Frequency Interference, a byproduct of loose hardware and connections, is checked using an AM radio receiver.
3. SI – structural integrity of all supporting hardware including poles, cross arms, insulators, structures, bases, foundations, buildings, etc.
4. Clearance – refers to proper spacing of conductors from other objects, trees and conductors.
5. EC – equipment condition on non-structural components such as circuit breakers, transformers, regulators, reclosers, relays, batteries, capacitors, etc.

Distribution facilities will be inspected by substation circuits on a 5-year cycle such that the entire system will be inspected every 5 years. Inspector instructions for inspecting all facilities and forms are included in the plan.

III Condition Rating Criteria

This criterion, as listed below, establishes the condition of a facility and also determines the repair schedule to correct deficiencies.

0) Good condition
1) Good condition but aging
2) Non-critical maintenance required – normally repair within 12 months
3) Priority maintenance required – normally repair within 90 days
4) Urgent maintenance required – report immediately to the utility and repair normally within 1 week

IV Corrective Action Schedule

The rating criteria as listed above determine the corrective action schedule.

V Record Keeping

All inspection forms and records will be retained for a minimum of 10 years. The inspection form contains all of the required critical information i.e. inspection dates, condition rating, schedule for repair and date of repair completion.

VI Reporting Requirements

A report and summary of this plan's progress will be submitted every two years with the first report due to the Commission by February 1, 2003. The report will consist of a cover letter documenting the percent of inspections achieved compared to the schedule and the percent of maintenance achieved within the scheduled time allowance.

VII Inspected Circuits and Facilities

Circuit # and description	Substation
Circuit 100 – 4,160 Volts (Main Breaker)	Substation #1 – 4,160 Volts, 7,500 KVA w/fans
Circuit 101 – 4,160 Volts	
Circuit 102 – 4,160 Volts	
Circuit 103 – 4,160 Volts	
Circuit 104 – 4,160 Volts	
Circuit 105 – 4,160 Volts	
Circuit 201 – 12,470 Volts	Substation #2 – 12,470 Volts, 7,500 KVA w/fans
Circuit 206 – 12,470 Volts	
Circuit 301 – 12,470 Volts	Substation #3 – 12,470 Volts, 10,000 KVA w/fans
Circuit 302 – 12,470 Volts	
Circuit 303 – 12,470 Volts	

VIII Scheduling Goals Established and Success of Meeting the Criteria:

It was this utility's goal to complete all monthly substation inspections, and to inspect 20% of the distribution system each year. In addition, we expected to complete all scheduled maintenance resulting from the inspections within the prescribed time periods specified in the rating criteria.

Approximately 40% of the distribution system was inspected during the past two years. Each year an infrared inspection is performed on approximately 90% of our overhead distribution system and approximately 34% of our underground enclosures. During the 2002

inspection, 3 urgent maintenance items were found. Two urgent items were repaired within 2 days. Components had to be ordered to repair/upgrade the 3rd urgent item. The repair/upgrade was completed within 6 weeks.

Of the 10 priority and non-critical maintenance items found, 6 were repaired shortly after being detected. Three of the remaining items require customer outages to address the problem. These items will be addressed when we can coordinate the customer outages.

The final maintenance item, classified as "routine repair", is a bushing on the Substation #1 transformer. We have continued to monitor the bushing since it was first detected in 1990 and its condition remains stable and in the "routine repair" category. The state of the bushing in Substation #1 is the driving force behind the conversion of the Substation #1 load to Substations #2 & #3.

IX Facility condition – rating criteria:

During the past two years, approximately 40% of the distribution system was inspected and all substation inspections were completed on time. We did not experience any outages caused by areas that were known to be in need of attention. Storm related outages have been minimal and equipment failure accounted for 10 outages affecting 161 customers. Work continues on the conversion of the 4,160 Volt distribution system to the 12,470 volt system. For example: during 2002, 3,750 feet of 3-phase distribution line and 1,210 feet of 1- and 2-phase distribution line was rebuilt to the 12,470 Volt standard and the load transferred to 12,470 Volt distribution. Also, the overhead electrical distribution system for one of the four downtown business district blocks was totally reconstructed.

Overall, the electric system is in good condition. Work will continue on converting the distribution system from Substation #1 to Substations #2 and #3.